

CLAIMS

I Claim:

1. A storage device for storing contact lenses and contact lens solution, comprising:
a case defining a reservoir for contact lens solution and a pair of contact lens retaining
5 compartments for retaining contact lenses, said case including stream generating means for
causing a stream of contact lens solution to flow from said reservoir to an exterior of said case
and filling means for causing the contact lens solution to flow from said reservoir into said
compartments; and

closure means removably attachable to said case for covering an exposed portion of said
10 stream generating means through which the stream of contact lens solution flows.

2. The storage device of claim 1, wherein said case includes an upper housing
member defining said compartments and a lower housing member attached to said upper housing
member, said reservoir being defined between said upper and lower housing members.

3. The storage device of claim 2, wherein said upper housing member includes a
reservoir covering section attached to said lower housing member to form said reservoir
therebetween and a cover section pivotally connected to the reservoir covering section, said
compartments being defined in said reservoir covering section.

4. The storage device of claim 3, wherein said case further includes a mirror
arranged on an inner wall of said cover section

5. The storage device of claim 3, wherein said reservoir covering section includes a support portion defining said compartments and a flexible pressure application portion which causes an increase in pressure in said reservoir when depressed.

5 6. The storage device of claim 3, wherein said case further comprises covers pivotally connected to said reservoir covering section to selectively cover said compartments.

7. The storage device of claim 6, wherein said reservoir covering section includes a mounting bracket alongside each of said compartment for mounting said covers, each of said
10 mounting brackets including a pair of projections separated by a cavity communicating with a respective one of said compartments with an aperture being formed at a bottom of each of said cavities, said reservoir covering section further including a channel communicating with each of said apertures and a pressure application zone.

15 8. The storage device of claim 7, wherein said filling means comprise a pair of valves each associated with a respective one of said compartments, each of said valves having an inlet opening situated in said reservoir and an outlet opening, each of said channels being arranged in the outlet opening of a respective one of said valves.

20 9. The storage device of claim 8, wherein each of said valves includes a tubular member defining a lower chamber in communication with said reservoir, a pumping chamber above said lower chamber and a shoulder between said lower chamber and said pumping

chamber, a mass resting on said shoulder and movable in said pumping chamber apart from said shoulder and limiting means for limiting movement of said mass in said pumping chamber apart from said shoulder whereby depression of said pressure application zone causes fluid in said reservoir to flow against said mass causing said mass to separate from said shoulder and open a
5 passage between said lower chamber and said pumping chamber and flow through said passage toward said outlet opening and into said channel.

10. The storage device of claim 9, wherein said limiting means comprise a plurality of protuberances formed in an inner wall of said tubular member.

11. The storage device of claim 10, wherein said tubular member includes notches formed in an annular lower surface to enable flow communication between said lower chamber and said reservoir.

12. The storage device of claim 7, wherein a part of each of said covers is arranged in a respective one of said cavities and is pivotable to block said channels when in a closed position and allow flow through said cavities when in an open position.

13. The storage device of claim 12, wherein said covers each include a projection defining a conduit therein and arranged in the respective one of said cavities, said conduit being arranged to block said channel when said cover is closed and be in communication with said channel when said cover is open.

14. The storage device of claim 1, wherein said closure means comprise means for preventing flow of contact lens solution from said reservoir when said closure means are attached to said case.

5 15. The storage device of claim 1, wherein said exposed portion of said stream generating means comprise a flow nipple arranged on said case, said nipple having a tip with an aperture formed therein through which streams of contact lens solution stored in said reservoir flow to an exterior of said case when said closure means are detached from said case.

10 16. The storage device of claim 15, wherein said nipple is detachable from said case to enable refilling of said reservoir.

15 17. The storage device of claim 15, wherein said case includes a projection with threads and said nipple has corresponding threads arranged to engage with said threads of said projection.

18. The storage device of claim 15, wherein said closure means comprise a cap removably attachable to said case.

20 19. The storage device of claim 18, further comprising attachment means for removably attaching said cap to said case, said attachment means comprising an annular rib formed on an outer surface of said nipple and an annular groove formed on said cap and

receivable of said annular rib of said nipple when said cap is attached to said case.

20. The storage device of claim 19, wherein said cap includes an interior cylindrical wall arranged to surround said nipple, said annular groove being formed on an inner surface of said cylindrical wall.

21. The storage device of claim 15, wherein said closure means comprise an engagement pad arranged to contact said tip and cover said aperture in said nipple when said closure means is attached to said case and thereby prevent flow of fluid from said reservoir through said aperture when said closure means is attached to said case.

22. The storage device of claim 15, wherein said stream generating means further comprise a pressure application zone formed on said case and arranged to cause an increase in pressure in said reservoir, said pressure application zone constituting a portion of said case having a reduced thickness in comparison to a surrounding portion of said case whereby application of pressure to said pressure application zone causes an increase in pressure in said reservoir and outflow of contact lens solution from said reservoir when said aperture in said nipple is uncovered.

23. The storage device of claim 1, wherein said filling means are constructed to provide a one-way flow of contact lens solution from said reservoir to said compartments and thereby prevent flow of contact lens solution from said compartments into said reservoir.

24. The storage device of claim 1, wherein said case further comprises a valve arranged to allow inflow of air into said reservoir and prevent outflow of contact lens solution from said reservoir.

5 25. The storage device of claim 24, wherein said valve comprises a valve member attached to said case, said case including an intake aperture, said valve member being arranged to cover said aperture upon application of pressure from said reservoir and separate from said aperture in the absence of pressure being applied from said reservoir.

10 26. A storage device for storing contact lenses and contact lens solution, comprising:
a case defining a reservoir for contact lens solution and a pair of contact lens retaining compartments for retaining contact lenses, said case including a flow nipple having a tip with an aperture formed therein, said nipple being removably attached to said case, said nipple being detachable from said case to enable refilling of said reservoir; and
15 closure means removably attachable to said case for covering said aperture in said nipple.

27. The storage device of claim 26, wherein said case includes a projection with threads and said nipple has corresponding threads arranged to engage with said threads of said projection.

20 28. The storage device of claim 26, wherein said closure means comprise a cap removably attachable to said case, further comprising attachment means for removably attaching

said cap to said case, said attachment means comprising an annular rib formed on an outer surface of said nipple and an annular groove formed on said cap and receivable of said annular rib of said nipple when said cap is attached to said case.

5 29. The storage device of claim 28, wherein said cap includes an interior cylindrical wall arranged to surround said nipple, said annular groove being formed on an inner surface of said cylindrical wall.

10 30. The storage device of claim 26, wherein said closure means comprise an engagement pad arranged to contact said tip and cover said aperture in said nipple when said closure means is attached to said case and thereby prevent flow of fluid from said reservoir through said aperture when said closure means is attached to said case.

15 31. The storage device of claim 26, wherein said case further include a pressure application zone arranged to cause an increase in pressure in said reservoir, said pressure application zone constituting a portion of said case having a reduced thickness in comparison to a surrounding portion of said case whereby application of pressure to said pressure application zone causes an increase in pressure in said reservoir and outflow of contact lens solution from said reservoir when said aperture in said nipple is uncovered.

20 32. A storage device for storing contact lenses and contact lens solution, comprising:
a case defining a reservoir for contact lens solution and a pair of contact lens retaining

compartments for retaining contact lenses, said case including

a support portion on which said compartments are defined, said support portion including a cavity communicating with each of said compartments and having an aperture formed at a bottom thereof, a channel communicating with each of said apertures and a pressure application zone,

covers movably connected to said support portion to selectively cover said compartments, a part of each of said covers being arranged in a respective one of said cavities and being movable to block said channel when in a closed position and allow flow through said cavity when in an open position, and

a pair of valves each associated with a respective one of said compartments, each of said valves having an inlet opening situated in said reservoir and an outlet opening, each of said channels being arranged in the outlet opening of a respective one of said valves.

33. The storage device of claim 32, wherein said support portion includes a mounting bracket alongside each of said compartments for mounting said covers, each of said mounting brackets including a pair of projections, said cavities being arranged between said projections.

34. The storage device of claim 32, wherein each of said valves includes a tubular member defining a lower chamber in communication with said reservoir, a pumping chamber above said lower chamber and a shoulder between said lower chamber and said pumping chamber, a mass resting on said shoulder and movable in said pumping chamber apart from said shoulder and limiting means for limiting movement of said mass in said pumping chamber apart

from said shoulder whereby depression of said pressure application zone causes fluid in said reservoir to flow against said mass causing said mass to separate from said shoulder and open a passage between said lower chamber and said pumping chamber and flow through said passage toward said outlet opening and into said channel.

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35. The storage device of claim 34, wherein said limiting means comprise a plurality of protuberances formed in an inner wall of said tubular member.

36. The storage device of claim 35, wherein said tubular member includes notches
10 formed in an annular lower surface to enable flow communication between said lower chamber and said reservoir.

37. The storage device of claim 32, wherein said covers each include a projection
defining a conduit therein and arranged in the respective one of said cavities, said conduit being
15 arranged to block said channel when said cover is closed and be in communication with said channel when said cover is open.